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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 7-12, and 14-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Sharma et al. (U.S. Patent 6,331,906).

For claim 1, Sharma et al. discloses a data transmission method for transmitting and receiving a transmission signal between a plurality of data transmission apparatuses interconnected via transmission paths in a ring configuration, the transmission signal being based on data processed according to a predetermined communication protocol, the method comprising:

generating, in a physical layer of a first data transmission apparatus, reception data *(see figure 7a, which recite an amplifier/regenerator 125a that generates reception data from received transmission data 55dap' and 55adp' along a bypass path indicated by dotted lines)* in response to a transmission signal outputted from an immediately upstream data transmission apparatus *(see figure 7a, which recite receiving a transmission signal 55dap' at the west network ports from an upstream node)*, generating a transmission signal based on the reception data, and outputting the transmission signal to an immediately downstream data transmission apparatus *(see figure 7a, which recite outputting a transmission signal 55dap' at the east network ports to a downstream node)*, the first data transmission apparatus being at least one of the plurality of data

transmission apparatuses *(see column 11 lines 61-65 and figure 7a, which recite an optical switching node in restoration mode that provides a bypass path indicated by a dotted line)*;

generating, in a physical layer of a second data transmission apparatus, reception data in response to a transmission signal outputted from an immediately upstream data transmission apparatus *(see column 11 lines 35-44 and figure 7a, which recite an optical switching node OSN in normal operation that passes incoming traffic from 55daw and 55dap' to the terminal equipment ports of an ADM 50a along a path indicated by solid lines)*, and processing the reception data in a link layer of the second data transmission apparatus according to the communication protocol *(see column 6 lines 7-18, which recite an add-drop multiplexer ADM 50a that processes SONET or ATM traffic at the link layer)*, the second data transmission apparatus being the rest of the plurality of data transmission apparatuses other than the first data transmission apparatus *(see column 11 lines 35-44 and figure 7a, which recite an optical switching node in normal mode that provides a normal path to ADM 50a indicated by a solid line)*; and

processing transmission data in the link layer of the second data transmission apparatus according to the communication protocol *(see column 6 lines 7-18, which recite an add-drop multiplexer ADM 50a that processes SONET or ATM traffic at the link layer and passes the data to the optical switching node OSN)*, generating a transmission signal in the physical layer of the second data transmission apparatus based on the transmission data, and outputting the transmission signal to an immediately downstream data transmission apparatus *(see figure 7a, which recite outputting a transmission signal 55dap' at the east network ports to a downstream node)*.

For claim 2, Sharma et al. discloses a data transmission method, wherein the first data transmission apparatus transmits and receives the transmission signal in accordance with an instruction from an outside of its own physical layer, in a manner such that the reception data bypasses its own link layer *(see column 16 lines 15-44 and figure 13, which recite a control logic of OSN 120a that receives control messages from adjacent nodes outside its own physical layer to control logic 170)*.

For claim 3, Sharma et al. discloses a data transmission method, wherein the first data transmission apparatus transmits and receives the transmission signal by maintaining its own link layer in a reset state where a data process operation is suspended, so that the reception data bypasses the link layer *(see column 11 lines 26-29, which recite a switching state that allows traffic to bypass the terminal equipment of the associated node)*.

For claim 4, Sharma et al. discloses a data transmission method, further comprising at the time of initialization for allowing the plurality of data transmission apparatuses in which both of the link layer and the physical layer are in the reset state to perform transmission/reception of a transmission signal there between; causing the link layer and the physical layer of the second data transmission apparatus to exit the reset state *(see column 11 lines 35-44 and figure 7a, which recite an optical switching node OSN in normal operation that passes incoming traffic at the physical layer from 55daw and 55dap' to the terminal equipment ports of an ADM 50a at the link layer)*; and causing only the physical layer of the first data transmission apparatus to exit the reset state *(see column 11 lines 61-65 and figure 7a, which recite an optical switching node in restoration mode that provides a bypass path indicated by a dotted line at the physical layer)*.

For claims 5, 12, and 19, Sharma et al. discloses a data transmission method, wherein: the transmission signal is generated in the physical layer by mapping symbols of the transmission data to any of a plurality of signal levels; and the reception data are generated in the physical layer based on evaluation levels for distinguishing and evaluating each signal level of the transmission signal *(see column 10 lines 11-28 and column 16 lines 15-44, which recite WDM demultiplexer 160 and WDM multiplexer 180 that evaluates the different levels of the multi-wavelength signal ports)*.

For claim 7, Sharma et al. discloses a data transmission system having a plurality of data transmission apparatuses interconnected with each other via transmission paths in a ring configuration, the data transmission apparatuses transmitting and receiving a transmission signal there between, wherein the data transmission apparatuses each comprise:

a processing section for processing transmission/reception data according to a predetermined communication protocol *(see column 6 lines 7-18 and figure 7a, which recite an add/drop multiplexer 50a that processes transmission/reception data according to SONET or ATM protocol)*; and

a transmitting/receiving section for generating a transmission signal based on the transmission data processed in the processing section and outputting the transmission signal to an immediately downstream data transmission apparatus, and for generating reception data based on a transmission signal outputted from an immediately upstream data transmission apparatus and outputting the reception data to the processing section *(see column 11 lines 31-67 and figure 7a, which recite a Optical Switching Node OSN that generates a transmission signal to immediately downstream nodes based on transmission data received from immediately upstream nodes)*,

wherein:

a first data transmission apparatus generates reception data in the transmitting/receiving section *(see figure 7a, which recite an amplifier/regenerator 125a that generates reception data from received transmission data 55dap' and 55adp' along a bypass path indicated by dotted lines)* based on a transmission signal outputted from an immediately upstream data transmission apparatus *(see figure 7a, which recite receiving a transmission signal 55dap' at the west network ports from an upstream node)*, generates a transmission signal based on the reception data, and outputs the transmission signal to an immediately downstream data transmission apparatus *(see figure 7a, which recite outputting a transmission signal 55dap' at the east network ports to a downstream node)*, the first data transmission apparatus being at least one of the plurality of data transmission apparatuses *(see column 11 lines 61-65 and figure 7a, which recite an optical switching node in restoration mode that provides a bypass path indicated by a dotted line)*;

a second data transmission apparatus, which is the rest of the plurality of data transmission apparatuses other than the first data transmission apparatus *(see column 11 lines 35-44 and figure 7a, which recite an optical switching node in normal mode that provides a normal path to ADM 50a indicated by a solid line)*, generates reception data in the transmitting/receiving section in response to a transmission signal outputted from an immediately upstream data transmission apparatus *(see column 11 lines 35-44 and figure 7a, which recite an optical switching node OSN in normal operation that passes incoming traffic from 55daw and 55dap' to the terminal equipment ports of an ADM 50a along a path indicated by solid lines)*, and processes the reception data in the processing section according to the communication protocol

(see column 6 lines 7-18, which recite an add-drop multiplexer ADM 50a that processes SONET or ATM traffic at the link layer); and

the second data transmission apparatus processes transmission data in the processing section according to the communication protocol *(see column 6 lines 7-18, which recite an add-drop multiplexer ADM 50a that processes SONET or ATM traffic at the link layer and passes the data to the optical switching node OSN)*, generates a transmission signal in the transmitting/receiving section based on the transmission data, and outputs the transmission signal to an immediately downstream data transmission apparatus *(see figure 7a, which recite outputting a transmission signal 55dap' at the east network ports to a downstream node)*.

For claims 8 and 15, Sharma et al. discloses a data transmission system, wherein the transmitting/receiving section comprises:

a bypass path for outputting the reception data by bypassing its own processing section; and a selector for selecting one of the transmission data and the reception data in accordance with an operating condition of the processing section and outputting selected data to a transmitting end of the transmitting/receiving section, the transmission data outputted from the processing section *(see column 11 lines 35-44 and figure 7a, which recite an optical switching node OSN in normal operation that outputs outgoing traffic 55abw' and 55abp' from the terminal equipment ports of an ADM 50a along a path indicated by solid lines)* and the reception data outputted through the bypass path *(see figure 7a, which recite an amplifier/regenerator 125a of OSN 120a that generates and outputs reception data 55abw' and 55abp' from received transmission data along a bypass path indicated by dotted lines)*, wherein the selector of the first data transmission apparatus selects the reception data outputted through the bypass path, in

accordance with an instruction from an outside of its own transmitting/receiving section *(see column 16 lines 15-44 and figure 13, which recite a control logic of OSN 120a that receives control messages from adjacent nodes outside its own physical layer to control logic 170).*

For claims 9 and 16, Sharma et al. discloses a data transmission system, wherein the transmitting/receiving section comprises: a bypass path for outputting the reception data by bypassing its own processing section; and a selector for selecting one of the transmission data and the reception data in accordance with an operating condition of the processing section and outputting selected data to a transmitting end of the transmitting/receiving section, the transmission data being outputted from the processing section *(see column 11 lines 35-44 and figure 7a, which recite an optical switching node OSN in normal operation that outputs outgoing traffic 55abw' and 55abp' from the terminal equipment ports of an ADM 50a along a path indicated by solid lines)* and the reception data being outputted through the bypass path *(see figure 7a, which recite an amplifier/regenerator 125a of OSN 120a that generates and outputs reception data 55abw' and 55abp' from received transmission data along a bypass path indicated by dotted lines)*, wherein the selector of the first data transmission apparatus selects the reception data outputted through the bypass path, when the processing section of the first data transmission apparatus is in a reset state where a data processing operation is suspended *(see column 11 lines 26-29, which recite the OSN that allows traffic to bypass the terminal equipment processing section when processing of foreign traffic is suspended).*

For claims 10 and 17, Sharma et al. discloses a data transmission system, wherein the data transmission apparatuses each further comprises a control section for controlling operations of its own processing section and its own transmitting/receiving section, wherein the control

section of the first data transmission apparatus controls the processing section of the first data transmission apparatus so as to maintain its reset state *(see column 16 lines 15-44, which recite control logic 170 that maintains the processing section reset state by designating switching states that bypass the processing element)*.

For claims 11 and 18, Sharma et al. discloses a data transmission system, further comprising transmission lines for communicably interconnecting the control sections of the respective data transmission apparatuses, wherein the control section of the first data transmission apparatus controls the processing section of the first data transmission apparatus so as to maintain its reset state *(see column 16 lines 15-44, which recite control logic 170 that maintains the processing section reset state by designating switching states that bypass the processing element)*, in accordance with an instruction inputted through the transmission line *(see column 16 lines 15-44 and figure 13, which recite a control logic of OSN 120a that receives control messages from adjacent nodes outside its own physical layer to control logic 170)*.

For claim 14, Sharma et al. discloses a data transmission apparatus interconnected with other data transmission apparatuses via transmission paths in a ring configuration and performing transmission/reception of a transmission signal with the other data transmission apparatuses, the data transmission apparatus comprising:

a processing section for processing transmission/reception data according to a predetermined communication protocol *(see column 6 lines 7-18 and figure 7a, which recite an add/drop multiplexer 50a that processes transmission/reception data according to SONET or ATM protocol)*; and

a transmitting/receiving section for generating a transmission signal based on transmission data processed in the processing section and outputting the transmission signal to another data transmission apparatus, and for generating reception data based on a transmission signal outputted from another data transmission apparatus and outputting the reception data to the processing section *(see column 11 lines 31-67 and figure 7a, which recite a Optical Switching Node OSN that generates a transmission signal to immediately downstream nodes based on transmission data received from immediately upstream nodes)*,

wherein:

in a first mode, the transmitting/receiving section generates reception data based on a transmission signal outputted from another data transmission apparatus, generates a transmission signal based on the reception data, and outputs the transmission signal to another data transmission apparatus *(see column 11 lines 61-65 and figure 7a, which recite an optical switching node in restoration mode that provides a bypass path indicated by a dotted line)*;

in a second mode different from the first mode, the transmitting/receiving section generates reception data in response to a transmission signal outputted from another data transmission apparatus and outputs the reception data to the processing section *(see column 11 lines 35-44 and figure 7a, which recite an optical switching node OSN in normal operation that passes incoming traffic from 55daw and 55dap' to the terminal equipment ports of an ADM 50a along a path indicated by solid lines)*;

the processing section processes the reception data outputted from the transmitting/receiving section, according to the communication protocol, and outputs to the transmitting/receiving section transmission data processed according to the communication

protocol *(see column 6 lines 7-18, which recite an add-drop multiplexer ADM 50a that processes SONET or ATM traffic at the link layer and passes the data to the optical switching node OSN)*; and the transmitting/receiving section generates a transmission signal based on the transmission data outputted from the processing section and outputs the transmission signal to another data transmission apparatus *(see figure 7a, which recite outputting a transmission signal 55dap' at the east network ports to a downstream node)*.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 6, 13, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sharma et al. (U.S. Patent 6,331,906) in view of Stiegler et al. (U.S. Patent 7,071,861).

For claims 6, 13, and 20, Sharma et al. disclose all the subject matter of the claimed invention with the exception wherein the communication protocol is defined by MOST (Media Oriented Systems Transport). However, Sharma et al. disclose that the data transmission apparatus interconnected with other data transmission apparatuses via transmission paths in a ring configuration and method for operating the data transmission apparatus can be deployed using various types of protocols and synchronous data *(see column 6 lines 7-18)*. Stiegler et al. from the same or similar fields of endeavor discloses a ring network that transmits synchronous data using the Media Orientated System Transport (MOST) protocol *(see column 1 lines 32-40)*. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use a ring network that transmits synchronous data using the Media Orientated System Transport (MOST) protocol as taught by Stiegler et al. with the data transmission apparatus interconnected with other data transmission apparatuses via transmission paths in a ring configuration and method for operating the data transmission apparatus that can be deployed using various types of protocols and synchronous data as taught by Sharma et al. The MOST protocol for synchronous data can be implemented by configuring the ADM terminal equipment

50a as taught by Sharma et al. to follow the well known MOST protocol standard. The motivation for using MOST protocol as suggested by Stiegler et al. with the data transmission apparatus interconnected with other data transmission apparatuses via transmission paths in a ring configuration and method for operating the data transmission apparatus is to provide high-grade stereo transmission of arbitrary audio signals *(see column 1 lines 41-51)*.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. *(see form PTO-892)*.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BEN H. LIU whose telephone number is (571)270-3118. The examiner can normally be reached on 9:00AM to 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571)272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ricky Ngo/
Supervisory Patent Examiner, Art Unit 2416

BL